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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/521,166	MORIKAWA, HIROSHI	
	Examiner	Art Unit	
	Barbara D. Reinier	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-5,7-9,17,18,22,23 and 25-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3,7-9,17,18,22,23 and 25-29* is/are rejected.

7)☒ Claim(s) *4,5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Page 22, line 9: the use of "is" is singular and should be the plural form "are".

Appropriate correction is required.

2. Claims 17 and 18 are objected to because of the following informalities:

Claim 17 line 17: the phrase “and a color of a dot on said bitmap data and a color of a dot on said bitmap data” is written. One of the “and a color of a dot on said bitmap data” phrases should be reviewed and removed or modified as appropriate.

Claim 18 line 1: the claim begins “A method for outputting comprising”. There is no definition as to what the output is. The examiner treated the preamble to mean outputting “bitmap data” based on similar claim preambles.

Appropriate correction is required.

Double Patenting

3. Claims 7-9 and 27 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over amended claims 1, 4 and 7 dated 2/22/2008 of copending Application No. 10/521355. Although the

conflicting claims are not identical, they are not patentably distinct from each other because:

4. For example:

Application 10/521,166 Claims 7-9, 27	**Application 10/521,355 Claims 1, 4, 7**
<u>Claim 7</u>. An output apparatus comprising: a bitmap data storage unit for storing bitmap data before transformation;	<u>Claim 1</u>. A printing apparatus comprising: a bitmap data storage unit for storing bitmap data;
<u>Claim 7 con't</u>. a bitmap data acquisition unit for acquiring bitmap data from said bitmap data storage unit; <u>Claim 8</u>. The output apparatus according to claim 7, wherein: said certain part is in a rectangular shape having a size of n x m, where n and m represent a positive integer.	<u>Claim 1 con't.</u> a bitmap data acquisition unit for acquiring said bitmap data in a matrix of a dot pattern of n x m from said bitmap data storage unit;
<u>Claim 7 con't</u>. a transformation rule retention unit for retaining at least one bitmap data transformation rule that is composed of a pair of information on certain part of said bitmap data and information indicating vector data that forms an image after transformation of said certain part;	<u>Claim 1 con't.</u> a transformation rule retention unit for retaining data transformation rules for transforming bitmap data; and
<u>Claim 7 con't</u>. a data transformation unit for transforming part of said bitmap data according to said rule,	<u>Claim 1 con't.</u> a data transformation unit for transforming part of said bitmap data according to said transformation rules,
<u>Claim 7 con't</u>. checking, whether or not the information on certain part of bitmap data obtained by the bitmap data acquisition unit matches the information on certain part of bitmap data retained by the rule retention unit: and, <u>Claim 8</u>. The output apparatus according to claim 7, wherein: said certain part is in a rectangular shape having a size of n x m, where n and m represent a positive integer.	<u>Claim 1 con't.</u> wherein said transformation rules include a matrix of a dot pattern of n x m before transformation and a matrix of a dot pattern of n x m after transformation each of which corresponds to each of the before transformation n x m dot patterns, and according to said transformation rules,
<u>Claim 7 con't</u>. if matched replacing the	<u>Claim 1 con't</u>. if the matrix of a dot pattern

information on certain part of bitmap data obtained by the bitmap data acquisition unit with a pair of information indicating vector data having an image resulting from the transformation of the certain part; and Claim 8. The output apparatus according to claim 7, wherein: said certain part is in a rectangular shape having a size of n x m, where n and m represent a positive integer.	of n x m of said bitmap data matches any one of said n x m dot patterns before transformation, said pattern is transformed into the corresponding one of said dot patterns after transformation;
Claim 7 con't. an output unit for outputting data that is produced based on transformation results from said data transformation unit and processing results from said jaggy elimination processing unit.	Claim 1 con't. and printing unit for printing data that is produced based on processing results.
Claim 7 con't. an output unit for outputting data that is produced based on transformation results from said data transformation unit and processing results from said jaggy elimination processing unit. Claim 27. An output apparatus for transforming and outputting bitmap data according to claim 7, further comprising: a jaggy elimination processing unit for executing processing of eliminating jaggies appearing on said bitmap data.	Claim 7. A printing apparatus according to claim 1, further comprising a jaggy elimination processing unit for executing processing of eliminating jaggies on said bitmap data, and a printing unit for printing data that is produced based on processing results from said jaggy elimination processing unit.
Claim 9. The output apparatus according to claim 8, wherein: said size is 3 x 3.	Claim 4. The printing apparatus according to claim 1, wherein said form of n x m dot pattern is 3 x 3 dot patterns.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3-5, 17, 22, 25 and 26 are based upon using a "predetermined calculation". The specification states the "certain calculation" is the calculation of coordinate information of the bitmap data after transformation using coordinate information of the bitmap data before transformation. It is further stated that using the function of a certain calculation enables coordinate information within bitmap data before transformation to change into coordinate information after transformation, and thereby, bitmap data after transformation is produced. Using this function, the way in which bitmap data is transformed can be altered. *The "inverse function of a certain calculation" is employed for producing bitmap data <u>after transformation</u> rather than before.*

Page 23 lines 15-17 of the Specification states "*The term "certain calculation" would mean a calculation for executing a certain transformation on the bitmap data acquired by the bitmap data acquisition unit.*" However in contrast, page 36 lines 11-15 of the Specification states "*Then, based on the second vector data and the bitmap data stored in the bitmap data storage unit, the data production unit produces bitmap data*

after transformation. The above first-to-second vector data transformation is carried out using the function of a certain calculation."

<u>It is unclear whether coordinate information is obtained from vector data, bitmap data or a combination there of as well as how it the "certain calculation" works since the disclosure suggests the same calculation is used on different data sets</u>.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 3, 17, 22, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al (6,232,978) in view of Okazaki et al (4,736,399).

<u>Regarding claim 3:</u> Ishida teaches an output apparatus **(col. 1 lines 9-13 & col. 13 lines 55-60)** for transforming and outputting bitmap data **(col. 1 lines 41-54)** comprising: a bitmap data storage unit for storing bitmap data before transformation **(col. 14 lines 41-43)**; a vectorization unit for producing first vector data by vectorizing at least one part of the bitmap data **(coarse contour vector, 2 of Figure 9 & S222 of Figure 22, col. 1 lines 44-47 & col. 14 lines 44-45)**; a data production unit for producing bitmap data after transformation **(processing, col. 1 lines 49-51 & col. 8 lines 56-59)** based on a predetermined calculation **(smoothing and zoom processing,**

col. 2 lines 64), the bitmap data before transformation **(col. 5 lines 30-33)** and first vector data **(contour vectors, col. 1 lines 44-46 & col. 8 lines 54-56)**; and an output unit for outputting the bitmap data after transformation produced by the data production unit **(col. 5 lines 34-44)**; and producing second coordinate information that specifies a target dot to be processed **(col. 2 lines 8-14 & lines 59-64).**

Ishida does not explicitly teach producing bitmap data after transformation based on an *inverse function*. Ishida does not explicitly teach producing second coordinate information based on information that specifies a target dot to be processed using the inverse function of the certain calculation; a color determination unit for determining a color of a position specified by the second coordinate information, based on the first vector data produced by the vectorization unit and a color of a dot on the bitmap data, and then setting up the color determined thereby for the target dot specified by the first coordinate information; and a control unit for controlling so that the second coordinate information production by the inverse transformation unit and the dot color determination by the color determination unit can be performed on all dots on bitmap data to be outputted.

However, Okazaki teaches a system **(col. 7 lines 20-45)** producing bitmap data **(corrected image produced by the digital fluorographic apparatus, col. 1 lines 10-11 & col. 3 lines 20-23)** after transformation based on an inverse function **(Figure 5, col. 3 lines 50-54)**, the bitmap data **(distorted image, col. 3 lines 32-33)** and first vector data **(X, col. 3 lines 21-24)**, producing second coordinate **(distorted image, col. 3 lines 23-24)** information based on information that specifies a target dot

to be processed **(pixel (picture element), col. 3 lines 22)**, using the inverse function of the certain calculation **(Figure 5, col. 3 lines 50-54)**; a color determination unit **(intensity, col. 1 lines 14-16 & grey level, col. 7 line 34)** for determining a color **(intensity)**, if the first vector data is in a passing relationship with a dot represented by the second coordinate information **(col. 2 lines 5-13 & col. 4 lines 22-27)**, the color of the position **(intensity of the pixel)** specified by the second coordinate information **(Figure 7)** being determined based on the position specified by the second coordinate information **(X, col. 3 lines 21-24)**, the first vector data **(X')** produced by the vectorization unit and a color **(intensity & grey level)** of a dot **(pixel, col. 4 lines 10-11)** on the bitmap data **(digital image)**, and then setting up the color **(intensity, col. 4 line 8)** determined thereby for the target dot specified by the first coordinate information **(pixel (picture element), col. 3 lines 22)**; and a control unit for controlling so that the second coordinate information production by the inverse transformation unit **(Figure 5, col. 3 lines 50-54)** and the dot color determination by the color determination unit **(intensity & grey level)** can be performed on all dots on bitmap data to be outputted **(corrected image, col. 3 lines 20-23)**.

In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to have applied the inverse color mapping function of Okazaki's invention with the image smoothing system as taught by Ishida.

The motivation to do so would be to provide a more dynamic system and robust system for generating greater accuracy and output quality by reducing distortion in the rendered image ("*…imaging apparatus which can provide an image configured so as to*

closely approximate the original object by correcting the spatial distortion, thus realizing a display wherein the image suffers so little distortion that an exact quantitative inspection can reliably be based on it." Okazaki col. 1 lines 51-56).

Therefore, it would have been obvious to combine Ishida and Okazaki to obtain the invention as specified in claim 3.

Regarding claim 17: Ishida teaches method for transforming and outputting bitmap data **(col. 1 lines 9-13 & col. 13 lines 55-60)** comprising: producing first vector data by vectorizing at least one part of the bitmap data before transformation that is stored **(coarse contour vector, 2 of Figure 9 & S222 of Figure 22, col. 1 lines 44-47 & col. 14 lines 44-45)**; producing bitmap data after transformation **(processing, col. 1 lines 49-51 & col. 8 lines 56-59)** based on a predetermined calculation **(smoothing and zoom processing, col. 2 lines 64),** the bitmap data before transformation **(col. 5 lines 30-33)** and first vector data **(contour vectors, col. 1 lines 44-46 & col. 8 lines 54-56)**; outputting the bitmap data after transformation **(col. 5 lines 34-44)**, the step of producing bitmap data after transformation comprising: producing second coordinate information that specifies a target dot to be processed **(col. 2 lines 8-14 & lines 59-64).**

Ishida does not explicitly teach producing bitmap data after transformation based on an *inverse function,* producing second coordinate information by inversely transforming first coordinate information that specifies a target dot to be processed using the inverse function of the predetermined calculation; if the first vector data is in a passing relationship with a dot represented by the second coordinate information,

determining a color of a position specified by the second coordinate information based on the position specified by the second coordinate information, the first vector data and a color of a dot on the bitmap data, and then setting up the color determined thereby for the target dot specified by the first coordinate information.

However, Okazaki teaches a system **(col. 7 lines 20-45)** producing bitmap data **(corrected image produced by the digital fluorographic apparatus, col. 1 lines 10-11 & col. 3 lines 20-23)** after transformation based on an inverse function **(Figure 5, col. 3 lines 50-54)**, producing second coordinate information **(distorted image, col. 3 lines 23-24)** by inversely transforming first coordinate information that specifies a target dot to be processed **(pixel (picture element), col. 3 lines 22)** using the inverse function of the predetermined calculation **(Figure 5, col. 3 lines 50-54)**; if the first vector data **(X', col. 3 lines 21-24)** is in a passing relationship with a dot represented by the second coordinate information **(col. 2 lines 5-13 & col. 4 lines 22-27)**, determining a color of a position **(intensity of the pixel)** specified by the second coordinate information **(Figure 7)** based on the position specified by the second coordinate information **(X, col. 3 lines 21-24)**, the first vector data and a color of a dot on the bitmap data **(distorted image, col. 3 lines 32-33)**, and then setting up the color **(intensity, col. 4 line 8)** determined thereby for the target dot specified by the first coordinate information **(pixel (picture element), col. 3 lines 22)**.

In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to have applied the inverse color mapping function of Okazaki's invention with the image smoothing system as taught by Ishida.

The motivation to do so would be to provide a more dynamic system and robust system for generating greater accuracy and output quality by reducing distortion in the rendered image ("*…imaging apparatus which can provide an image configured so as to closely approximate the original object by correcting the spatial distortion, thus realizing a display wherein the image suffers so little distortion that an exact quantitative inspection can reliably be based on it.*" Okazaki col. 1 lines 51-56).

Therefore, it would have been obvious to combine Ishida and Okazaki to obtain the invention as specified in claim 17.

Regarding claim 22: Ishida teaches a computer program stored in a computer readable medium for transforming and outputting bitmap data **(col. 1 lines 9-13 & col. 13 lines 55-60)**; producing bitmap data after transformation **(processing, col. 1 lines 49-51 & col. 8 lines 56-59)** based on a predetermined calculation **(smoothing and zoom processing, col. 2 lines 64),** the bitmap data before transformation **(col. 5 lines 30-33)** and first vector data **(contour vectors, col. 1 lines 44-46 & col. 8 lines 54-56)**; outputting the bitmap data after transformation **(col. 5 lines 34-44)**, the step of producing bitmap data after transformation comprising: producing second coordinate information that specifies a target dot to be processed **(col. 2 lines 8-14 & lines 59-64).**

Ishida does not explicitly teach producing bitmap data after transformation based on an *inverse function,* producing second coordinate information by inversely transforming first coordinate information that specifies a target dot to be processed using the inverse function of the predetermined calculation; determining a color of a

position specified by the second coordinate information based on the first vector data and a color of a dot on the bitmap data, and then setting up the color determined thereby for the target dot specified by the first coordinate information; and controlling so that the step of producing the second coordinate information and the step of setting up the color determined thereby for the target dot can be performed on all dots on bitmap data to be outputted.

However, Okazaki teaches a system **(col. 7 lines 20-45)** producing bitmap data **(corrected image produced by the digital fluorographic apparatus, col. 1 lines 10-11 & col. 3 lines 20-23)** after transformation based on an inverse function **(Figure 5, col. 3 lines 50-54)**, producing second coordinate information **(distorted image, col. 3 lines 23-24)** by inversely transforming first coordinate information that specifies a target dot to be processed **(pixel (picture element), col. 3 lines 22)** using the inverse function of the predetermined calculation **(Figure 5, col. 3 lines 50-54)**; determining a color of a position **(intensity of the pixel)** specified by the second coordinate information **(Figure 7)** based on the position specified by the second coordinate information **(X, col. 3 lines 21-24)**, the first vector data and a color of a dot on the bitmap data **(distorted image, col. 3 lines 32-33)**, and then setting up the color **(intensity, col. 4 line 8)** determined thereby for the target dot can be performed on all dots on bitmap data to be outputted **(each pixel in the image, col. 2 lines 5-13)**.

In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to have applied the inverse color mapping function of Okazaki's invention with the image smoothing system as taught by Ishida.

The motivation to do so would be to provide a more dynamic system and robust system for generating greater accuracy and output quality by reducing distortion in the rendered image ("*...imaging apparatus which can provide an image configured so as to closely approximate the original object by correcting the spatial distortion, thus realizing a display wherein the image suffers so little distortion that an exact quantitative inspection can reliably be based on it.*" Okazaki col. 1 lines 51-56).

Therefore, it would have been obvious to combine Ishida and Okazaki to obtain the invention as specified in claim 22.

Regarding claim 25: Ishida teaches method for transforming and outputting bitmap data **(col. 1 lines 9-13 & col. 13 lines 55-60)** wherein bitmap data after transformation **(processing, col. 1 lines 49-51 & col. 8 lines 56-59)** is directly based on an inverse function of a predetermined calculation **(smoothing and zoom processing, col. 2 lines 64)**, the bitmap data before transformation **(col. 5 lines 30-33)**, and the vector data **(contour vectors, col. 1 lines 44-46 & col. 8 lines 54-56)**.

Ishida does not explicitly teach producing bitmap data after transformation based on an *inverse function*.

However, Okazaki teaches a system **(col. 7 lines 20-45)** producing bitmap data **(corrected image produced by the digital fluorographic apparatus, col. 1 lines 10-11 & col. 3 lines 20-23)** after transformation based on an inverse function **(Figure 5, col. 3 lines 50-54)**.

In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to have applied the inverse color mapping function of Okazaki's invention with the image smoothing system as taught by Ishida.

The motivation to do so would be to provide a more dynamic system and robust system for generating greater accuracy and output quality by reducing distortion in the rendered image ("…*imaging apparatus which can provide an image configured so as to closely approximate the original object by correcting the spatial distortion, thus realizing a display wherein the image suffers so little distortion that an exact quantitative inspection can reliably be based on it.*" Okazaki col. 1 lines 51-56).

Therefore, it would have been obvious to combine Ishida and Okazaki to obtain the invention as specified in claim 25.

Regarding claim 26: Ishida teaches an output apparatus for transforming and outputting bitmap data **(col. 1 lines 9-13 & col. 13 lines 55-60)** wherein a predetermined calculation is a calculation for executing a predetermined transformation on the bitmap data **(smoothing and zoom processing, col. 2 lines 64)** acquired by the bitmap data acquisition unit **(CPU 71 of Figure 15, col. 1 lines 41-44 & col. 3 lines 53-62)**.

9. Claims 7-9, 18, 23 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al (6,232,978) in view of Karidi et al (2003/0123094).

<u>Regarding claim 7:</u> Ishida teaches an output apparatus **(col. 1 lines 9-13 & col. 13 lines 55-60)** comprising: a bitmap data storage unit for storing bitmap data before transformation **(col. 3 lines 30-33 & col. 14 lines 41-43)**; a bitmap data acquisition unit for acquiring bitmap data from the bitmap data storage unit **(CPU 71 of Figure 15, col. 1 lines 41-44 & col. 3 lines 53-62)**; information indicating vector data that forms an image after transformation of the certain part **(col. 2 lines 15-19 & col. 3 lines 5-6)**; and an output unit for outputting data that is produced based on transformation results **(final output)** from the data transformation unit and processing results from the jaggy elimination processing unit **(col. 3 line 6)**.

Ishida does not explicitly teach a transformation rule retention unit for retaining at least one bitmap data transformation rule that is composed of a pair of information on certain part of the bitmap data; a data transformation unit for transforming part of the bitmap data according to the rule, checking, whether or not the information on certain part of bitmap., data obtained by the bitmap data acquisition unit matches the information on certain part of bitmap data retained by the rule retention unit: and, if matched replacing the information on certain part of bitmap data obtained by the bitmap data acquisition unit with a pair of information indicating vector data having an image resulting from the transformation of the certain part.

However, Karidi teaches a transformation rule retention unit **(503 of Figure 5, jaggy look-up table)** for retaining at least one bitmap data transformation rule **(patterns related to one another, paragraph 54)** that is composed of a pair of information on certain part of the bitmap data **(502 of Figure 5)**; a data transformation

unit for transforming part of the bitmap data according to the rule **(paragraphs 53-54)**, checking, whether or not the information on certain part of bitmap data obtained by the bitmap data acquisition unit matches the information on certain part of bitmap data retained by the rule retention unit **(Figure 5, paragraph 54)**; and, if matched replacing the information on certain part of bitmap data obtained by the bitmap data acquisition unit with a pair of information indicating vector data having an image resulting from the transformation of the certain part **(504 of Figure 5)**.

In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus as taught by Ishida with the smoothing method and apparatus as taught by Karidi.

The motivation to do so is to produce text images with improved smoothness for all edges ("...*a method and apparatus for producing text images with improved smoothness in horizontal, vertical, and slanted edges, and for hole mending and dot removal*." Karidi paragraph 2).

Therefore, it would have been obvious to have combined Ishida and Karidi to obtain the invention in claim 7.

Regarding claims 8 and 9: Ishida further discloses the certain part **(101) (pixel of focus)** is in a rectangular shape **(102)** having a size of n X m **(102) (3x3)**, where n **(is 3)** and m **(is 3)** represent a positive integer **(the pixel and the eight pixels neighboring it enter the outline extraction unit, col. 1 lines 65-67 - col. 2 lines 1-4)**.

__Regarding claim 18:__ Ishida teaches a method for outputting bitmap data **(col. 1 lines 9-13 & col. 13 lines 55-60)** comprising the steps of: acquiring bitmap data stored **(CPU 71 of Figure 15, col. 1 lines 41-44 & col. 3 lines 53-62)**; information indicating vector data that forms an image after transformation of the certain part **(col. 2 lines 15-19 & col. 3 lines 5-6)**, and outputting data that is produced based on transformation results **(final output)** from the data transformation unit and processing results from the jaggy elimination processing unit **(col. 3 line 6)**.

Ishida does not explicitly teach a transformation rule having a pair of information on certain part of the bitmap data, the transforming comprising checking, whether or not the information on certain part of bitmap data obtained by the bitmap data acquisition unit matches the information on certain part of bitmap data retained by the rule retention unit: and, if matched replacing the information on certain part of bitmap data obtained by the bitmap data acquisition unit with a pair of information indicating vector data having an image resulting from the transformation of the certain part.

However, Karidi teaches a transformation rule retention unit **(503 of Figure 5, jaggy look-up table)** for retaining at least one bitmap data transformation rule **(patterns related to one another, paragraph 54)** that is composed of a pair of information on certain part of the bitmap data **(502 of Figure 5)**; checking, whether or not the information on certain part of bitmap data obtained by the bitmap data acquisition unit matches the information on certain part of bitmap data retained by the rule retention unit **(Figure 5, paragraph 54)**; and, if matched replacing the information on certain part of bitmap data obtained by the bitmap data acquisition unit with a pair of

information indicating vector data having an image resulting from the transformation of the certain part **(504 of Figure 5)**.

In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus as taught by Ishida with the smoothing method and apparatus as taught by Karidi.

The motivation to do so is to produce text images with improved smoothness for all edges ("...*a method and apparatus for producing text images with improved smoothness in horizontal, vertical, and slanted edges, and for hole mending and dot removal*." Karidi paragraph 2).

Therefore, it would have been obvious to have combined Ishida and Karidi to obtain the invention in claim 18.

Regarding claim 23: Ishida teaches a computer program stored in a computer readable medium for executing **(col. 1 lines 9-13 & col. 13 lines 55-60)**: acquiring bitmap data stored **(CPU 71 of Figure 15, col. 1 lines 41-44 & col. 3 lines 53-62)**; information indicating vector data that forms an image after transformation of the certain part **(col. 2 lines 15-19 & col. 3 lines 5-6)**, and outputting data that is produced based on transformation results **(final output)** from the data transformation unit and processing results from the jaggy elimination processing unit **(col. 3 line 6)**.

Ishida does not explicitly teach a transformation rule having a pair of information on certain part of the bitmap data, the transforming comprising checking, whether or not the information on certain part of bitmap data obtained by the bitmap data acquisition

unit matches the information on certain part of bitmap data retained by the rule retention unit: and, if matched replacing the information on certain part of bitmap data obtained by the bitmap data acquisition unit with a pair of information indicating vector data having an image resulting from the transformation of the certain part.

However, Karidi teaches a transformation rule retention unit **(503 of Figure 5, jaggy look-up table)** for retaining at least one bitmap data transformation rule **(patterns related to one another, paragraph 54)** that is composed of a pair of information on certain part of the bitmap data **(502 of Figure 5)**; checking, whether or not the information on certain part of bitmap data obtained by the bitmap data acquisition unit matches the information on certain part of bitmap data retained by the rule retention unit **(Figure 5, paragraph 54)**; and, if matched replacing the information on certain part of bitmap data obtained by the bitmap data acquisition unit with a pair of information indicating vector data having an image resulting from the transformation of the certain part **(504 of Figure 5)**.

In view of this, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus as taught by Ishida with the smoothing method and apparatus as taught by Karidi.

The motivation to do so is to produce text images with improved smoothness for all edges ("...*a method and apparatus for producing text images with improved smoothness in horizontal, vertical, and slanted edges, and for hole mending and dot removal*." Karidi paragraph 2).

Therefore, it would have been obvious to have combined Ishida and Karidi to obtain the invention in claim 23.

Regarding claim 27: Ishida teaches an output apparatus for transforming and outputting bitmap data **(col. 1 lines 9-13 & col. 13 lines 55-60)** comprising a jaggy elimination processing unit for executing processing of eliminating jaggies appearing on the bitmap data **(as shown in Figure 1 the output unit 15 prints data produced based on the transformation [smoothing] results of the transformation [binary image reproducing] unit 14 and processing results from the jaggy elimination processing [outline extraction] unit 13, col. 3 lines 55-60 & col. 11 lines 29-63)**.

Regarding claim 28: Ishida teaches eliminating jaggies appearing on the bitmap **(col. 3 lines 49-62)**.

Regarding claim 29: Ishida teaches a computer program stored in a computer readable medium for executing **(col. 1 lines 9-13 & col. 13 lines 55-60)** for eliminating jaggies appearing on the bitmap **(col. 3 lines 49-62)**.

Allowable Subject Matter

10. Claims 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims. In the prior art of record, the examiner did not explicitly find the following limitations:

"*said color determination unit determines in such a manner that if said position is placed above said line, a color of a dot immediately above said dot including said position is determined as a color of said position, or if placed below said line, a color of a dot immediately below said dot including said position is determined as a color of said position, and then sets up said color determined thereby for said target dot specified by said first coordinate information*." and

"*said color determination unit determines in such a manner that if said position is placed on a left hand with respect to said line, a color of a dot immediately on a left, adjacent to said dot including said position is determined as a color of said position, or if placed on a right hand, a color of a dot immediately on a right, adjacent to said dot including said position is determined as a color of said position, and then sets up said color determined thereby for said dot specified by said first coordinate information*."

Response to Arguments

11. Applicant's arguments, see page 10, filed 6/17/2008, with respect to Specification have been fully considered and are persuasive. The objection of the title has been withdrawn.

12. Applicant's arguments, see page 10, filed 6/17/2008, with respect to Double Patenting have been fully considered and are persuasive. The rejection of canceled claims 10-12 and 24 have been withdrawn.

13. Applicant's arguments, see page 10, filed 6/17/2008, with respect to 35 U.S.C. 101 have been fully considered and are persuasive. The rejection of canceled claims 20, 21 and 24 has been withdrawn.

14. Applicant's arguments, see page 11, filed 6/17/2008, with respect to 35 U.S.C. 112 have been fully considered and are persuasive. The rejection of canceled claims 2, 6, 16 and 21 has been withdrawn.

15. Applicant's arguments filed 6/17/2008 have been fully considered but they are not persuasive. The examiner respectfully traverses the applicant's arguments. Claims 3-5, 17, 22, 25 and 26 are based upon using a "predetermined calculation". The amended language from "certain calculation" to "predetermined calculation" does not clarify the situation. The specification states the "certain calculation" is the calculation of coordinate information of the bitmap data after transformation using coordinate information of the bitmap data before transformation. It is further stated that using the function of a certain calculation enables coordinate information within bitmap data before transformation to change into coordinate information after transformation, and thereby, bitmap data after transformation is produced. Using this function, the way in which bitmap data is transformed can be altered. The *"inverse function of a certain calculation"* is employed for producing bitmap data <u>after transformation</u> rather than before.

Page 23 lines 15-17 of the Specification states "*The term "certain calculation" would mean a calculation for executing a certain transformation on the bitmap data acquired by the bitmap data acquisition unit*." However in contrast, page 36 lines 11-15 of the Specification states "*Then, based on the second vector data and the bitmap data stored in the bitmap data storage unit, the data production unit produces bitmap data after transformation. The above first-to-second vector data transformation is carried out using the function of a certain calculation.*"

<u>It is unclear when or whether the coordinate information is obtained from vector data, bitmap data or a combination there of as it seems there is a contradiction in the Specification. It is also unclear how the "certain calculation" works since the disclosure suggests the same calculation is used on different data sets at different times with different outputs (bitmap data, vector data)</u>.

16. Applicant's arguments, see page 12, filed 6/17/2008, with respect to Claim Rejections 35 U.S.C. 102 have been fully considered and are persuasive. The rejection of canceled claims 1, 2, 6-9, 15, 16, 18, 20, 21 and 23 has been withdrawn.

17. Applicant's arguments filed 6/17/2008 have been fully considered but they are not persuasive.

In the applicant remarks on page 15 paragraph 2, the applicant argues that Okazaki is silent about a color determination unit. The examiner respectfully disagrees. In Okazaki, the color is represented as an intensity value (col. 6 lines 30-67).

In the applicant remarks on page 15 paragraph 1, the applicant points out that Ishida does not "directly" use bitmap data after transformation as well as stating this

feature is clarified in the newly added claim 25. The examiner respectfully disagrees with the applicant. The applicant states "…*wherein bitmap data after transformation is directly based on* …" The examiner interprets this as written to mean that the transformation is directly based on the inverse function that was derived from vector data that was derived from the original bitmap. In the examiners view, this sequence of derivation and transformation has the final result still based directly on the initial data.

18. Applicant's arguments with respect to claims 3-5, 7-9, 17, 18, 22, 23 and new claims 25-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara D. Reinier whose telephone number is (571)270-5082. The examiner can normally be reached on M-Th, 8am-4pm Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Haskins L. Twyler can be reached on 571-272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner
Art Unit 2625

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